

REMARKS

I. Introduction

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of June 10, 2009 is respectfully requested.

By this amendment, claims 1, 24, and 25 have been amended and claim 41 has been added. Claims 1-11, 24-25, and 36-41 are now pending in the application. No new matter has been added by these amendments.

II. Prior Art Rejections

Currently, claims 1-11 and 36-38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Stang et al. (US 4,777,186) and also under 35 U.S.C. § 103(a) as being unpatentable over Stang et al. (US 4,777,186), claim 24 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaminski et al. (US 5,283,924) in view of Stang et al., and claims 39 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stang et al. in view of Jennings (US 3,551,947).

Claim 1 is patentable over Stang et al., Kaminski et al., and Jennings, whether taken alone or in combination, for the following reasons. Claim 1 requires a foam molding method comprising: providing a mold having a cavity, the mold including a tube for allowing communication between the cavity of the mold and external air, and a discharge valve for opening and closing the tube; preparing a foamable material by mechanically mixing a material to be foamed with a gas; opening the discharge valve such that the cavity of the mold is placed under atmospheric pressure, and such that the cavity of the mold is at atmospheric pressure when injection of the foamable material into the cavity of the mold is started; injecting the foamable

material into the cavity of the mold; controlling an injection flow rate of the foamable material injected into the cavity of the mold; pressurizing the cavity of the mold to a pressurization; foaming the foamable material in the cavity of the mold under the pressurization to control foaming of the foamable material; and releasing the pressurization of the cavity of the mold.

Stang et al. discloses a process for producing polyurethane foam in which a foam mixture is placed into *a closed chamber*. (See column 3, lines 36-38.) In contrast, the method of the present invention involves *opening* a discharge valve such that the cavity is at atmospheric pressure when injection of the foamable material into the cavity is started. Because Stang et al. does not disclose opening a discharge valve such that the cavity is at atmospheric pressure when injection of the foamable material into the cavity is started, Stang et al. cannot meet the requirements of claim 1. Further, the method of the present invention requires preparing a foamable material *by mechanically mixing a material to be foamed with a gas*, and injecting *the foamable material*. In other words, a foamable material is prepared, including mixing a material with a gas, and the prepared foamable material is then injected into the mold. By contrast, Stang et al. discloses preparing a liquid reaction mixture, and using the gas generated in the mixture to pressurize the mold. (See column 2, lines 9-16.) Stang et al. also discloses that a second gas can be inserted *into the chamber*, but does not disclose preparing a foamable material by mixing a material with a gas and injecting the prepared foamable material into the mold. Because Stang et al. does not disclose preparing a foamable material by mechanically mixing a material to be foamed with a gas and injecting the foamable material, Stang et al. cannot meet the requirements of claim 1.

On page 2 of the Office Action, the Examiner states that “any injection of material into the mold would necessarily include controlling the flow rate.” In making this assertion, the

Examiner has interpreted the claim language so broadly that it is rendered meaningless; Applicants thus submit that this interpretation is clearly outside the bounds of “broadest reasonable interpretation.” If this unduly broad interpretation of the term “controlling” is maintained in a prior art rejection in any future Office Action, Applicants request some evidentiary support for the proposition that a step of “injecting” would necessarily include controlling an injection flow rate.

On page 4 of the Office Action, the Examiner states that Stang et al. does not disclose controlling the injection flow rate of the foamable material injected into the mold cavity, but states that it would have been obvious to do so “to enable the predetermined pressure to be maintained in the cavity.” However, this obviousness rationale provides no *evidentiary support* and no *reasoning* as to *why* one of ordinary skill would have modified the teachings of Stang et al., and what would have led them to do so by controlling an injection flow rate. There is no teaching-suggestion-motivation rationale set forth in the Office Action, there is no assertion of what is common knowledge in the art, there is no citation to any of the obviousness rationales discussed in MPEP 2144.04, and there is no rationale based on the *KSR* precedent. Instead, the obviousness rationale set forth in the Office Action is merely a *conclusory statement*. (See MPEP 2142 “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” Emphasis added.) As explained in the MPEP, the conclusory obviousness rationale set forth in the Office Action cannot support a conclusion of obviousness; Applicants respectfully request withdrawal of this rejection.

As discussed in detail in the Stang et al. reference, the two-liquid foamable material disclosed in that reference produces a gas by the reaction of the two liquids during the foam

molding method. Accordingly, gas is being generated as the foamable material is cured. The method of the present invention has the advantage that an expansion ration of the foam is determined based on (i) the amount of gas mechanically mixed into the foamable material to be injected into the cavity, and (ii) the amount of foamable material injected into the cavity. By this method, the expansion ratio of the foam is more easily controlled, thereby allowing an increased uniformity of the cells in the foam.

The Kaminski et al. and Jennings references are relied upon for alleged disclosures unrelated to the above-discussed deficiencies of Stang et al., and fail to cure those deficiencies. Further, it appears that there would have been no reason to modify any of the prior art of record to yield a configuration that would meet the requirements of claim 1. It is thus submitted that the invention of the present application, as defined in claim 1, is not anticipated nor rendered obvious by the prior art, and yields significant advantages over the prior art. Allowance is respectfully requested.

Claims 2-11, and 36-41 depend, directly or indirectly, from claim 1 and are thus allowable for at least the reasons set forth above in support of claim 1. Independent claims 24 and 25 include the above-discussed limitations of claim 1, and are thus also allowable for at least the reasons set forth above in support of claim 1.

In view of the foregoing amendments and remarks, inasmuch as all of the outstanding issues have been addressed, Applicants respectfully submit that the present application is now in condition for allowance, and action to such effect is earnestly solicited. Should any issues

remain after consideration of the response, however, the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

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